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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/080,742	02/21/2002	Markus Olhofer	23077-06634	8152

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EXAMINER	
SHARON, AYAL I	
ART UNIT	**PAPER NUMBER**
2123	

DATE MAILED: 12/28/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/080,742	OLHOFER ET AL.	
	Examiner	Art Unit	
	Ayal I. Sharon	2123	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *21 February 2002*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *21 February 2002* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *7/9/2002*.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

DETAILED ACTION

Introduction

1. Claims 1-20 of U.S. Application 10/080,742, originally filed on 02/21/2002, have been presented for examination.

Drawings

2. This application has been filed with informal drawings which are acceptable for examination purposes only. Formal drawings will be required when the application is allowed.

Claim Rejections - 35 USC § 101

3. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

4. **Claims 1-20 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.**

5. The claims, as written, are directed to an abstract mathematical algorithm. The claimed invention is therefore not concrete or tangible. See MPEP §2106 (A), and *In re Warmerdam*, 33 F.3d 1354, 1360, 31 USPQ2d 1754, 1759 (Fed. Cir. 1994). See also *Schrader*, 22 F.3d at 295, 30 USPQ2d at 1459.

6. The claims also lack a practical application – a "**useful, concrete and tangible result.**" The test for practical application as applied by the examiner involves the determination of the following factors:

   a. "**Useful**" - The Supreme Court in *Diamond v. Diehr* requires that the examiner look at the claimed invention as a whole and compare any asserted utility with the claimed invention to determine whether the asserted utility is accomplished. Applying utility case law the examiner will note that:

      I. the utility need not be expressly recited in the claims, rather it may be inferred.

      II. if the utility is not asserted in the written description, then it must be well established.

   b. "**Tangible**" - Applying *In re Warmerdam*, 33 F.3d 1354, 31 USPQ2d 1754 (Fed. Cir. 1994), the examiner will determine whether there is simply a mathematical construct claimed, such as a disembodied data structure and method of making it. If so, the claim involves no more than a manipulation of an abstract idea and therefore, is nonstatutory under 35 U.S.C. § 101. In *Warmerdam* the abstract idea of a data structure became capable of producing a useful result when it was fixed in a tangible medium which enabled its functionality to be realized. See MPEP §2106 (A). See also *Schrader*, 22 F.3d at 295, 30 USPQ2d at 1459.

c. "**<u>Concrete</u>**" - Another consideration is whether the invention produces a "concrete" result. Usually, this question arises when a result cannot be assured. An appropriate rejection under 35 U.S.C. § 101 should be accompanied by a lack of enablement rejection, because the invention cannot operate as intended without undue experimentation.

7. The Examiner respectfully submits that under current PTO practice, the claimed invention does not recite *either a tangible or a concrete result.*
   a. The claims are not tangible because simply a mathematical construct is claimed.
   b. The claims are not concrete because there is no identifiable output. Since there are no results, results are not assured.

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

9. The prior art used for these rejections is as follows:
   - Bäck, T. et al. "Evolutionary Computation: Comments on the History and Current State." <u>IEEE Transactions on Evolutionary Computation</u>, April 1997. Vol.1, No.1, pp.3-17. (Hereinafter "**Bäck**").

10. The claim rejections are hereby summarized for Applicant's convenience. The detailed rejections follow.

11. Claims 1-13 and 15-18 are rejected under 35 U.S.C. 102(b) as being anticipated by Back.

12. In regards to Claim 1, Bäck teaches the following limitations:

1. An optimization method based on an evolution strategy, comprising the steps of:

[See Bäck, especially: pp.4-5, Section "III. The Structure of An Evolutionary Algorithm"]

describing one of a model, structure, shape and design to be optimized using a parameter set comprising object parameters;

[See Bäck, especially: pp.4-5, Section "III. The Structure of An Evolutionary Algorithm"]

creating offsprings of the parameter set by modifying the object parameters, wherein said modifying includes at least one of mutating the object parameters and recombining the object parameters;

[See Bäck, especially: pp.4-5, Section "III. The Structure of An Evolutionary Algorithm"]

evaluating the quality of the offsprings;

[See Bäck, especially: pp.4-5, Section "III. The Structure of An Evolutionary Algorithm"]

wherein the parameter set comprises at least one strategy parameter representing a step-size of the mutation of associated object parameters; and

[See Bäck, especially: p.7, left column, 2nd para., which teaches that:

"In evolution strategies, the individuals consist of object variables ... and so-called *strategy parameters*, which are discussed in the next section."]

adapting the number of object parameters and the number of associated strategy parameters during optimization.

[See Bäck, especially: p.7, left column, 2nd para., which teaches that:

"In [125] Schwefel introduced an endogenous mechanism for step-size control by incorporating these parameters into the representation in order to facilitate the evolutionary *self-adaptation* of these parameters by applying evolutionary operators to the object variables and the strategy parameters for mutation at the same time ...]

13. In regards to Claim 2, Bäck teaches the following limitations:

> 2. The optimization method of claim 1 further comprising the step of: altering object parameters and strategy parameters, said altering includes at least one of selectively inserting object parameters and strategy parameters, and selectively removing object parameters and strategy parameters.

[See Bäck, especially: p.7, left column, 2^{nd} para., which teaches that:

"In evolution strategies, the individuals consist of object variables ... and so-called *strategy parameters*, which are discussed in the next section."]

14. In regards to Claim 3, Bäck teaches the following limitations:

> 3. The optimization method of claim 2, further comprising the step of: estimating the value of a newly inserted strategy parameter based on the information of strategy parameters associated with correlated object parameters.

[See Bäck, especially: p.7, right column, 2^{nd} para., which teaches that:

"A more elaborate *correlated mutation* scheme allows for the rotation of hyper-ellipses, as shown in the right part of Fig.2. This mechanism aims at a better adaptation to the topology of the objective function ..."]

15. In regards to Claim 4, Bäck teaches the following limitations:

> 4. The optimization method of claim 1, further comprising the step of: estimating the value of a newly inserted strategy parameter based on the information of strategy parameters associated with correlated object parameters.

[See Bäck, especially: p.7, right column, 2^{nd} para., which teaches that:

"A more elaborate *correlated mutation* scheme allows for the rotation of hyper-ellipses, as shown in the right part of Fig.2. This mechanism aims at a better adaptation to the topology of the objective function ..."]

16. In regards to Claim 5, Bäck teaches the following limitations:

> 5. The optimization method of claim 1, further comprising the step of: determining a position of said altering of said object parameter and an associated strategy parameter using a random function.

[See Bäck, especially: p.7, left column, 2nd para., which teaches that:

"The mutation operator works by adding a normally distributed random vector $\check{z}$ ...(i.e. the components of $\check{z}$ are normally distributed with expectation zero and variance σ_i^2)."]

17. In regards to Claim 6, Bäck teaches the following limitations:

> 6. The optimization method of claim 5, further comprising the step of: determining a time of said altering of said object parameter and the associated strategy parameter using a random function.

[See Bäck, especially: p.7, left column, 2nd para., which teaches that:

"The mutation operator works by adding a normally distributed random vector $\check{z}$ ...(i.e. the components of $\check{z}$ are normally distributed with expectation zero and variance σ_i^2)."]

18. In regards to Claim 7, Bäck teaches the following limitations:

> 7. The optimization method of claim 1, further comprising the step of: determining a time of said altering of said object parameter and an associated strategy parameter using a random function.

[See Bäck, especially: p.7, left column, 2nd para., which teaches that:

"The mutation operator works by adding a normally distributed random vector $\check{z}$ ...(i.e. the components of $\check{z}$ are normally distributed with expectation zero and variance σ_i^2)."]

19. In regards to Claim 8, Bäck teaches the following limitations:

> 8. The optimization method of claim 1, further comprising the step of: determining a position of said altering of said object parameter and an associated strategy parameter by the progress of the evolutionary optimization.

[See Bäck, especially: pp.7-8, Section "C. Self-Adaptation"]

20. In regards to Claim 9, Bäck teaches the following limitations:

> 9. The optimization method of claim 8, further comprising the step of: determining a time of said altering of said object parameter and the associated strategy parameter by the progress of the evolutionary optimization.

[See Bäck, especially: pp.7-8, Section "C. Self-Adaptation"]

21. In regards to Claim 10, Bäck teaches the following limitations:

> 10. The optimization method of claim 8, further comprising the step of: determining a time of said altering of said object parameter and an associated strategy parameter by the progress of the evolutionary optimization.

[See Bäck, especially: pp.7-8, Section "C. Self-Adaptation"]

22. In regards to Claim 11, Bäck teaches the following limitations:

> 11. The optimization method of claim 1, wherein the mutating of the object parameters does not directly influence the result of the evaluating step.

[See Bäck, especially: pp.7-8, Section "C. Self-Adaptation"]

23. In regards to Claim 12, Bäck teaches the following limitations:

> 12. An optimization method based on an evolution strategy, comprising the steps of:

[See Bäck, especially: pp.4-5, Section "III. The Structure of An Evolutionary Algorithm"]

> describing one of a model, structure, shape and design to be optimized using a parameter set comprising object parameters;

[See Bäck, especially: pp.4-5, Section "III. The Structure of An Evolutionary Algorithm"]

> creating offsprings of the parameter set by mutating of the object parameters and the structure of a parameter set, the structure of a parameter set defined by the number and position of the object parameters and the strategy parameters; and

[See Bäck, especially: pp.4-5, Section "III. The Structure of An Evolutionary Algorithm"]

> evaluating the quality of the offsprings;

[See Bäck, especially: pp.4-5, Section "III. The Structure of An Evolutionary Algorithm"]

> wherein the parameter set comprises at least one strategy parameter representing the step-size of the mutation of associated object parameters.

[See Bäck, especially: p.7, left column, 2nd para., which teaches that:

"In evolution strategies, the individuals consist of object variables … and so-called *strategy parameters*, which are discussed in the next section."]

Bäck also teaches:

"In [125] Schwefel introduced an endogenous mechanism for step-size control by incorporating these parameters into the representation in order to facilitate the evolutionary *self-adaptation* of these parameters by applying evolutionary operators to the object variables and the strategy parameters for mutation at the same time ...]

24. In regards to Claim 13, Bäck teaches the following limitations:

> 13. The optimization method of claim 12, wherein said step-size of the mutation is the variance of the normal distribution.

[See Bäck, especially: p.7, Section "C. Self-Adaptation", which teaches that Equations (7) and (8) provide weighted averages for the mean and standard deviation of the effects of mutation.]

25. In regards to Claim 15, Bäck teaches the following limitations:

> 15. The optimization method of claim 14, wherein the object parameters comprise control points and knot points, the method further comprising the step of: adapting a knot vector by inserting new control points and strategy parameters.

[See Bäck, especially: p.7, Section "C. Self-Adaptation", which teaches that:

"This mutation scheme, which is most frequently used in evolution strategies, is schematically depicted (for n=2) in the middle of Fig.2. The locations of equal probability density for descendants are concentric hyper-ellipses (just one is depicted in Fig.2) around the parental midpoint."]

Examiner interprets that the claimed "knot vector" correspond to Bäck's "concentric hyper-ellipses."

26. In regards to Claim 16, Bäck teaches the following limitations:

> 16. The optimization method of claim 15, further comprising the step of: estimating the values of newly inserted strategy parameters based upon the values of the strategy parameters of neighboring control points.

[See Bäck, especially: p.7, Section "C. Self-Adaptation", which teaches that:

"This mutation scheme, which is most frequently used in evolution strategies, is schematically depicted (for n=2) in the middle of Fig.2. The locations of equal probability density for descendants are concentric hyper-ellipses (just one is depicted in Fig.2) around the parental midpoint."]

27. In regards to Claim 17, Bäck teaches the following limitations:

> 17. A method for optimizing spline coded problems on the basis of an evolution strategy, comprising the steps of:
>
> describing one of a model, structure, shape and design to be optimized using a parameter set comprising object parameters representing control points and knot points and at least one strategy parameter representing the step-size of the mutation of associated object parameters;

[See Bäck, especially: p.7, left column, 2nd para., which teaches that:

"In evolution strategies, the individuals consist of object variables ... and so-called *strategy parameters*, which are discussed in the next section."]

Bäck also teaches:

"In [125] Schwefel introduced an endogenous mechanism for step-size control by incorporating these parameters into the representation in order to facilitate the evolutionary *self-adaptation* of these parameters by applying evolutionary operators to the object variables and the strategy parameters for mutation at the same time ...]

> mutating the object parameters and the strategy parameters to create offsprings of the set having the steps of :
>
> determining a control point insertion,
> inserting the control point in the parameter set,
> inserting a strategy parameter for the inserted control point,
> determining the knot points modified by the insertion of the control points,

[See Bäck, especially: p.7, Section "C. Self-Adaptation", which teaches that:

"This mutation scheme, which is most frequently used in evolution strategies, is schematically depicted (for n=2) in the middle of Fig.2. The locations of equal probability density for descendants are concentric hyper-ellipses (just one is depicted in Fig.2) around the parental midpoint."]

Examiner interprets that the claimed "knot points" correspond to Bäck's "concentric hyper-ellipses."

> determining the weighted averaging of the strategy parameter values of the modified control points, and
>
> assigning the weighted average value as the value of the inserted strategy parameter; and
>
> evaluating the quality of the offsprings.

[See Bäck, especially: p.7, Section "C. Self-Adaptation", which teaches that Equations (7) and (8) provide weighted averages for the mean and standard deviation of the effects of mutation.]

28. In regards to Claim 18, Bäck teaches the following limitations:

> 18. The method of claim 17, wherein said step-size of the mutation is the variance of the normal distribution.

[See Bäck, especially: p.7, Section "C. Self-Adaptation", which teaches that Equations (7) and (8) provide weighted averages for the mean and standard deviation of the effects of mutation.]

Claim Rejections - 35 USC § 103

29. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

30. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

31. The prior art used for these rejections is as follows:

a. Bäck, T. et al. "Evolutionary Computation: Comments on the History and Current State." IEEE Transactions on Evolutionary Computation, April 1997. Vol.1, No.1, pp.3-17. (Hereinafter "**Bäck**").

b. Weinert, K. et al. "Discrete NURBS-Surface Approximation Using an Evolutionary Strategy." REIHE CI 87/00, SFB 531, 2000. pp.1-7. (Cited by Applicant. Hereinafter "**Weinert**").

32. The claim rejections are hereby summarized for Applicant's convenience. The detailed rejections follow.

33. **Claims 14 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bäck in view of Weinert.**

34. Bäck teaches most of the instant invention, as applied in the rejections of independent claims 12 and 17. However, Bäck does not expressly teach the limitations claimed in dependent claims 14 and 19.

35. In regards to Claim 14, Bäck does not expressly teach the following limitations:

> 14. The optimization method of claim 12, wherein said one of a model, structure, shape, and design is described using a spline.

Weinert, on the other hand, teaches the use of evolution strategy for spline curve optimization (See "Introduction"). Weinert also teaches (See "Conclusions and Outlook" section) that "Quality demands in CAD, e.g. the design of turbine blades, can be very high ... NURBS are an efficient and intuitive way to represent smooth surfaces using only few control points."

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teachings of Bäck with those of Weinert,

because Weinert teaches that using evolution strategy for spline curve optimization is "… an efficient and intuitive way to represent smooth surfaces using only few control points." (See Weinert, "Conclusions and Outlook" section on the next-to-last page).

36. In regards to Claim 19, Bäck does not expressly teach the following limitations:

> 19. The method of claim 17, to optimize a shape of at least one of an aerodynamic structure and a hydrodynamic structure.

Weinert, on the other hand, teaches the use of evolution strategy for spline curve optimization (See "Introduction"). Weinert also teaches (See "Conclusions and Outlook" section) that "Quality demands in CAD, e.g. the design of turbine blades, can be very high … NURBS are an efficient and intuitive way to represent smooth surfaces using only few control points."

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teachings of Bäck with those of Weinert, because Weinert teaches that using evolution strategy for spline curve optimization is "… an efficient and intuitive way to represent smooth surfaces using only few control points." (See Weinert, "Conclusions and Outlook" section on the next-to-last page).

37. **Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bäck in view of Official Notice.**

38. Bäck teaches most of the instant invention, as applied in the rejection of independent claim 17. However, Bäck does not expressly teach the limitations claimed in dependent claim 20.

39. In regards to Claim 20, Bäck does not expressly teach the following limitations:

> 20. A computer program stored in a computer readable medium for performing the method of claim 17.

Official Notice is given that it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teachings of Bäck by placing the algorithm on a computer readable medium, because doing so would enable running the algorithm on a computer.

Conclusion

40. The following prior art, made of record and not relied upon, is considered pertinent to applicant's disclosure.

41. Carson, Y. et al. "Simulation Optimization: Methods and Applications." Proc. of the 29th Winter Simulation Conf. 1997. pp.118-126. (See p.121 for a brief summary of Genetic Algorithms (GA) and Evolutionary Strategies (ES). Carson and refers to the Bäck reference for additional details).

42. Bäck, T. et al. "A Survey of Evolution Strategies." Proc. of the 4th Int'l Conf. on Genetic Algorithms. July 1991. pp.2-9. (See Section 4.2 "Correlated Mutations" for more details about correlation strategies.)

43. Sbalzarini, I. et al. "Evolutionary Optimization for Flow Experiments." Center of Turbulence Research Annual Research Briefs. 2000. (Teaches the use of evolution strategies for optimization of aerodynamic structures. See section 5, "Application to Jet Control.")

44. Műller, S. et al. "Application of Machine Learning Algorithms to Flow Modeling and Optimization." Center of Turbulence Research Annual Research Briefs. 1999. (Teaches the use of evolution strategies for optimization of aerodynamic structures. See first paragraph of Section 1, "Motivation and Objectives")
45. Koumoutsakos, P. et al. "Evolution Strategies for Parameter Optimization in Jet Flow Control." Center of Turbulence Research Annual Research Briefs. 1998. (Teaches the use of evolution strategies for optimization of aerodynamic structures. See Sections 1.1 "Evolution Strategies", and 1.2, "Jet Flow Control").
46. Pittman, J. et al. "Fitting Optimal Piecewise Linear Functions Using Genetic Algorithms". IEEE Transactions on Pattern Analysis and Machine Intelligence. July 2000. Vol.22, Issue 7, pp.701-718. (Teaches the optimal fitting of piece-wise linear spline functions using Genetic Algorithms. See Section 1, "Introduction").
47. U.S. Patent 6,430,993 to Seta et al. (Teaches the use of evolution strategies in the design of a hydrodynamic structure – a tire – using spline functions. See especially col.2, lines 45-51; col.17, lines 28-63; col.23, lines 62-65; Fig.18 and col.40, lines 50-52; col.35, lines 50-55; col.56, lines 20-25; col.59, lines 54-61; col.61, lines 32-36; col.70, lines 22-26; and especially col.52, lines 25-35 and col.74, lines 30-50).
48. U.S. Patents 6,879,388 and 6,781,682 to Kasai et al. (Both patents teach the use of genetic algorithms to adjust the optical apparatus. See col.17, line 49 to col.18, line 67. Fig.18 is the flowchart of the genetic algorithm. Interpolation using spline functions is taught on col.37, lines 24-30).

Correspondence Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ayal I. Sharon whose telephone number is (571) 272-3714. The examiner can normally be reached on Monday through Thursday, and the first Friday of a bi-week, 8:30 am – 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Leo Picard can be reached at (571) 272-3749.

Any response to this office action should be faxed to (571) 273-8300, or mailed to:

USPTO
P.O. Box 1450
Alexandria, VA 22313-1450

or hand carried to:

USPTO
Customer Service Window
Randolph Building
401 Dulany Street
Alexandria, VA 22314

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Tech Center 2100 Receptionist, whose telephone number is (571) 272-2100.

Ayal I. Sharon
Art Unit 2123
December 20, 2005

Paul L. Rodriguez 12/22/05
Primary Examiner
Art Unit 2125